CLAIMS

Sub A17

1. A method for removing condensables from a natural gas stream upstream of a wellhead choke (505,552) connected to a subterranean formation (301,603,704) using a downhole inertia separator in which droplets and/or particles are separated from the gases and the gas from which the condensables have been removed is collected, characterized in that the method further comprises the steps of:

(A) inducing the natural gas stream to flow at supersonic velocity through an inertia separator comprising a conduit (1,23,314) having an acceleration section (3,25,312) in which the gas stream is accelerated to a supersonic velocity thereby causing it to cool to a temperature that is below a temperature at which condensables will begin to condense forming separate droplets and/or particles; and

(B) transporting the gas and/or the condensed condensables to a wellhead (505,552) and/or re-injecting it into the subterranean formation (301,603,704) from which it has been produced, or into a different formation (710), with the proviso that not all of the collected gas and condensables are re-injected into the same reservoir zone of the same formation (301,603,704).

2. The method of claim 1, wherein in a swirl imparting section (15,41,313,409) a swirling motion is induced to the supersonic stream of fluid thereby causing the liquid droplets to flow to a radially outer section of a collecting zone (11,37,318) in the stream, followed by the subsonic or supersonic extraction of the liquids into an outlet stream from the radially outer section of the ~~collecting zone (11,37,318).~~

3. The method of claim 2, wherein the swirling motion induced to the supersonic stream of fluid causes the condensables to flow to a radially outer section of a collecting zone (11,37,318) in the stream, followed by the subsonic or supersonic extraction of the condensables into an outlet stream from the radially outer section of the collecting zone (11,37,318).

4. The method of claim 3, wherein the shock wave is created by inducing the stream of fluid to flow through a diffuser (11,315).

5. The method of any one of claims 1 to 4, wherein transporting the gases from which the condensables have been removed to a wellhead (505,552) or different reservoir zone is accomplished through a production tubing (317,617), and the condensables or part of the condensables are transported to the surface through a different flowpath (618,708).

6. The method of claim 1 wherein water is removed from the gas as a condensable component.

7. A well completion system for producing gas from a subterranean formation comprising a wellhead (505,552), a wellbore containing a tubing (317,617) extending downhole from the wellhead (505,552), and an inertia separator comprising

optionally, a swirl imparting section (15,41,313,409) that imparts a swirling motion to the gas; and

a collection section (7,43,316) wherein a gas stream containing reduced amount of condensables is collected; characterized in that the inertia separator comprises

an acceleration section wherein in use gas from the subterranean formation (301,603,704) is accelerated to a supersonic velocity and condensables are condensed.

8. A well completion system as claimed in claim 7, comprising a supersonic inertia separator in a wellbore.

9. A well completion system as claimed in claim 7, comprising a supersonic inertia separator at the wellhead.

10. A well completion system as claimed in any one of claims 7 to 9, comprising a multiple branched wellbore system connecting the reservoir of a producing formation with one or more other reservoirs.

11. A well completion system as claimed in any one of claims 7 to 10, further comprising one or more submersible pumps.

12. A well completion system as claimed in claim 7, wherein the collection section (43,316) for collecting the gas stream containing a reduced amount of condensables is formed by a second outlet (43,316) which extends co-axially through a first outlet (27,318,319) for condensables into the tubular housing (23) of the ~~inertia separator~~.

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